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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,919	10/20/2005	Jianli Shi	NL 030488	1359
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EXAMINER				
LANGMAN, JONATHAN C				
ART UNIT		PAPER NUMBER		
1784				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/553,919

**Applicant(s)**

SHI ET AL.

**Examiner**

JONATHAN C. LANGMAN

**Art Unit**

1784

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 August 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 9-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 is/are allowed.
- 6) ☒ Claim(s) 1-4, 9-16 and 19 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-940)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/24/2010
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

References 3 and 5 of the US patents in the Information Disclosure Statement submitted August 24, 2010, were crossed through since they were previously provided in a PTO-892 notice of References Cited.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 9-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boulud (US 5,390,432) in view of Vondracek et al. (US 3,551,183).

Regarding claims 1-3, and 10, Boulud et al. teaches coatings on the interior surface of a steam chamber of a steam pressing iron. The sole plate, 1, (figure 3) within the steam chamber reads on the claimed substrate. The covering on the soleplate substrate on the bottom of the chamber includes a first layer 11 and a second layer 20, wherein the layer 20 is constituted by a water permeable fibrous (porous) material having hydrophilic properties (col. 3, lines 60-65). The first layer (11) is preferably chosen to have good thermally insulating properties, and Boulud teaches that enamel is a preferred embodiment (col. 3, lines 1-12).

Enamel is taught by the applicant to be preferred for the first coating (see instant claim 3), therefore it is said to also be inherently "essentially impermeable to water" and "thermally insulating". As well as inherently "lowers a temperature of the substrate to a value below the Leidenfrost point". A material and its properties are inseparable; therefore it is inherent that enamel will be essentially impermeable to water, be thermally insulating, and lower a temperature of the substrate to a value below the Leidenfrost effect. Furthermore, Boulud teaches the use of other materials that are inherently essentially impermeable to water, thermally insulating, and lower a temperature of the substrate to a value below the Leidenfrost effect, such as cements, sodium silicate, calcium carbonate, paints, carbonates and metallic oxides.

The second layer of Boulud comprises a screen or a fibrous mat (porous), and in one embodiment the screen is coated by a hydrophilic material, preferably the porous layer is coated in its entirety with a layer of sodium silicate (col. 3, lines 54-60).

Boulud does not teach the introduction of clay or alumina particles in this second layer.

Vondracek teach a steam chamber of a domestic appliance comprising a coating of sodium silicate. The coating has the addition of hydrated alumina particles. The coating is cured and dehydrated (col. 3, lines 30-35) resulting in an alumina and sodium silicate coating. The addition of alumina particles improves the physical strength of the sodium silicate coating (col. 3, lines 45-46), and that the coating decreases the solubility of the coating which is a desirable characteristic of coatings in the steam chamber (col. 3, lines 8-31). Vondracek go on to teach that unmodified sodium silicate (as taught by

Boulud) will have a problem with flaking (a deleterious effect known in the art), however by adding alumina to the sodium silicate, this flaking does not occur, and thicker coatings may be deposited (col. 3, lines 45-60).

It would have been obvious to a routineer in the art to add alumina to the sodium silicate second coating of Boulud, in order to increase the strength of the coatings, as well as to decrease flaking, and allow for the deposition of thicker coatings which is a particularly attractive advantage in the art as taught by Vondracek. The addition of alumina would further be obvious as Vondracek teaches that the addition of alumina results in a decrease of water solubility.

Vondracek go on to teach that colloidal clays may be used (col. 4, lines 20-25) to aid in the deposition of sodium silicate coatings.

It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to add clays to the sodium silicate layer of Boulud in order to aid in the deposition of sodium silicate, as is known in the art.

Regarding claim 9, Boulud is silent to the thickness of the respective layers, however thicknesses of respective layers, including those instantly claimed are an obvious choice to a routineer in the art and well within the grasp of a routineer in the art. It would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thicknesses of the first and second layers for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 11, since the two layers are in contact with one another and subsequently deposited, they are implicitly adhered to one another (If you turn the device of Boulud upside down the layers will not separate).

Regarding claims 12-15, Boulud teaches that the first layer may be sodium silicate (col. 3, lines 7) and the second layer comprises sodium silicate (col. 3, lines 57), they are said to be similar compositions. Sodium silicate in the first layer is said to be to some degree impermeable to water and thermally insulating, and will lower the temperature of the substrate to below the Leidenfrost point. The addition of hydrated alumina or colloidal clay is taught to be an obvious modification to the layer sodium silicate layers of Boulud and results in a hydrophilic layer as described above.

The instant limitation of selecting different binder to filler ratios and selecting different filler particles sizes for each of the first and second layers to determine the essentially impermeable and hydrophilic characteristics are product by process limitations. The layers of Boulud are expressly impermeable to water, and are expressly hydrophilic and therefore are said to have the same structure as that which is instantly claimed.

Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.", (In re Thorpe, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show

that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113).

Regarding claim 16, Boulud teaches that all the materials utilized are selected in a manner to withstand thermal conditions normally existing in the chambers (col. 5, lines 5-10) and thus are thermally stable.

Regarding claim 19, the claim is a product by process claim, for reasons stated above the product of Boulud et al. is substantially similar to the product as presented in instant claim 1 therefore it is said to anticipate it. See the product by process case law applied above. Furthermore, Boulud teaches that it is known and obvious in the art to cure sodium silicate coatings to obtain a more completely reacted coating (col. 3, lines 30-45).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boulud (US 5,390,432) and Vondracek et al. (US 3,551,183), as applied to claim 1 above, and further in view of Louison et al. (US 4,822,686).

Boulud and Vondracek teach a steam chamber of comprising an aluminum baseplate coated with a base coating of enamel. Boulud is silent to the enamel coating comprising inorganic oxides.

Louison et al. teach an enamel coating for soleplates comprising aluminum 9col. 47-55). Louison have found that when coating aluminum base plates with typical enamels, frittable at temperatures of about 600°C, that air micro bubbles present in the aluminum base plate escape from the aluminum base plate and blister the enamel coating (col. 2, lines 24-30). Louison et al. recognize that when coating enamel thereon, an enamel frit which is frittable at a temperature below 500 degrees is desirable in order to prevent blistering and deformation of the baseplate (col. 3, lines 20-25). The enamel frits are taught to comprise inorganic oxides (col. 3, lines 15-20).

It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use the low frittable enamels of Louison, which comprise inorganic oxides, as the enamel coatings of Boulud in order to prevent blistering and deformation of the aluminum base plate.

Although this enamel coating of Louison is taught to be on the outside of the aluminum soleplate steam chamber, and not on the inside of the steam chamber as described by Boulud, a routineer in the art would expect that the problem of blistering and deformation, taught by Louison, would be exacerbated on the inside of the steam chamber, as the inside of the chambers encounter higher operating temperatures then the outside. A routineer in the art would have appreciated the work of Louison, which shows that typical enamel frits blister when exposed to higher operating temperatures due to the air bubbles located in the aluminum sole plates, and would have included the low temperature frittable enamels, which comprise inorganic oxides, as the coatings for the inside of the steam chamber as taught by Boulud.



***Allowable Subject Matter***

Claim 5 is allowed.

Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant argues on page 8 of the remarks, that the coating 11, of Boulud, does not rise to a teaching, disclosing or suggesting " a first layer deposited on the interior surface of the substrate of the steam generating device for lowering a temperature of the substrate to a value below the Leidenfrost point". Moreover Boulud does not suggest or require that its coating 11 be thermally insulating.

The examiner disagrees. Boulud teaches that the first coating, 11, may be enamel. Instant Claim 3 states that the first coating may be enamel, and must be impermeable to water and thermally insulating, as well as lower a temperature of the substrate to a value below the Leidenfrost effect, as per instant claim 1.

Therefore, since Boulud teaches similar materials, i.e. enamel for the first coating, it is the examiners position that the enamel coating of Boulud is thermally insulating, essentially impermeable to water and will lower a temperature of the substrate to a value below the Leidenfrost effect. It has been held that similar materials

will possess similar characteristics and properties (see in re Best Case law applied above).

The examiner recognizes that Boulud is silent to these material characteristics, however, the examiner relies upon inherency of these material properties, supported by the fact that similar materials will yield similar characteristics and properties. The applicant has failed to provide evidence that the first coating layer of Boulud is not thermally insulating, not essentially impermeable to water, and will not lower a temperature of the substrate to a value below the Leidenfrost effect. Therefore applicants arguments are not found persuasive, and the rejections are maintained.

As to the newly recited limitation of the first coating being formed on the interior surface of a substrate; Boulud teaches a soleplate, 1, (see figure 3), which faces an interior surface of the steam chamber. This surface that faces the steam chamber is the surface which Boulud teaches the coatings are deposited. Therefore the soleplate, 1, taught by Boulud, upon which is deposited the coating layer, 11, reads on the claimed substrate.

Applicants' amendment, including the new limitation of the first coating lowering a temperature of the substrate to a value below the Leidenfrost effect, was not previously presented, and therefore necessitated a new search and consideration.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN C. LANGMAN whose telephone number is (571)272-4811. The examiner can normally be reached on Mon-Thurs 8:00 am - 6:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCL

/Jennifer C McNeil/  
Supervisory Patent Examiner, Art Unit 1784